

भारतीय मानक
बबूल की छाल — विशिष्टि
(पहला पुनरीक्षण)

Indian Standard
BABUL BARK — SPECIFICATION
(*First Revision*)

ICS 59.140.10

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Leather, Tanning Materials and Allied Products Sectional Committee had been approved by the Chemical Division Council.

BABUL [*Acacia nilotica* (Linn.) Del. Syn. *Acacia arabica* Linn. fam. Leguminosae] is a moderate-sized, spiny evergreen tree indigenous to Sind (in Pakistan), the Deccan and tropical Africa, and is naturalized in all parts of India. However, it is not so abundant in the south of the country and is rare in the extreme north-west, and is found most extensively on alluvial loam in northern India. There are three well recognized varieties, namely:

- a) *TELIA BABUL* which is the typical variety. It is a moderate-sized tree with a short trunk, a spreading crown and feathery foliage.
- b) Var. *vediana* Cooke, called *KAURIA BABUL*, a smaller tree with a shorter bole and rougher bark. It is considered fit only for firewood.
- c) Var. *cupressiformis* Stewart, the *RAMAKANTA* or *RAMKATI BABUL* is recognized by its broom-like ascending branches. It is found in parts of the Punjab, Rajasthan and the Deccan. In some parts, there is a religious prejudice against its use.

The bark of the *BABUL* tree is dark-brown or black and deeply fissured. It is the most important indigenous tanning material in northern India. The fall in the consumption of *BABUL* bark in large tanneries is because of short supplies owing to failure to replant trees and failure to market proper quality of the bark. In fact, the tanneries around Kanpur, the largest users of the *BABUL* bark, are now obtaining their supplies from the Punjab and Rajasthan. Apart from the bark, the pods are also fairly rich in tannin. It is interesting to note that the pods of *Acacia nilotica* found in Africa are richer in tannins than those from India. In India, very little quantity of pods are used for tanning.

BABUL bark is obtained mainly as a by-product, when trees are felled for timber or fuel. It is separated from the logs by beating them with wooden mallets and the strips thus obtained are dried in the open, chipped into smaller pieces and used in the tanneries. The tannin content of the bark varies considerably. Sometimes it is as high as 20 percent; but the average of the bark delivered to the tanneries has about 12 percent tannin content. The bark from the older trees, though richer in tannin is often more highly coloured. Though experiments have been carried out to manufacture tannin extracts from *BABUL* bark, such efforts have not met with success on account of low tannin content and comparatively low tan/non-tan ratio. However, *BABUL* bark is suitable for the manufacture of blended extracts with myrobalan nuts (*Terminalia chebula* Retz) or with *GORAN* [*Ceriops decandra* (Griff.) Ding Hou] barks. The pods contain 12 to 19 percent of tannin as such, or 18 to 27 percent after the removal of seeds.

Leather made from *BABUL* bark is firm and durable, though harsh and dark coloured. It is very well suited for heavier leathers. In combination with myrobalan nuts, *BABUL* gives a finished leather of excellent quality specially for sole and heavy leathers. The *BABUL* pods yield fairly light coloured leather. *BABUL* tannins are of the mixed class containing both the pyrogallol and the catechol types, and it penetrates the leather slowly. With modern methods of tanning leather, scientific control of pH, concentration, etc, the colour and other difficulties associated with the use of *BABUL* bark have been largely overcome.

This standard is based on the data collected from all over the country. The help received from the Central Leather Research Institute, Chennai and the British India Corporation Limited, Cooper Allen Branch, Kanpur is specially acknowledged.

This standard was originally published in 1969. In this revision, the requirement on pentachlorophenol (PCP) has been introduced keeping in view of the demand for eco-friendly inputs from the leather industry.

The composition of the Committee for formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

BABUL BARK — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for *BABUL* bark intended for tanning and for the use in the manufacture of tanning extracts.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IS No.	Title
1640 : 2007	Glossary of terms relating to hides, skins and leather
4905 : 1968	Methods of random sampling
5466 : 1969	Methods of test for vegetable tanning materials

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 1640 shall apply.

4 REQUIREMENTS

4.1 Material

The material shall be the bark of *BABUL* trees, *Acacia nilotica* (Linn.) Del. syn. *Acacia arabica* Linn. fam. Leguminosae, cut or crushed into pieces and dried in shade.

4.2 The material shall comply with the requirements given in Table 1.

5 PACKING AND MARKING

5.1 Packing

Unless otherwise agreed to between the purchaser and the supplier, the *BABUL* bark shall be packed in fairly light-proof packages like gunny bags.

5.2 Marking

Packages shall be marked on the outside with the following information:

- a) Name of the material;
- b) Net weight of the material;
- c) Supplier's name or recognized trade-mark, if any, or both; and
- d) Date of packing.

5.2.1 BIS Certification Marking

The packages may also be marked with the Standard Mark.

5.2.1.1 The use of the Standard Mark is governed by the provision of the *Bureau of Indian Standard Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 SAMPLING

The scale of sampling and criteria for conformity of the material to the standard shall be as prescribed in Annex A.

Table 1 Requirement for *BABUL* Bark
(Clause 4.2)

Sl No.	Characteristic	Requirement	Method of Test, Ref to Cl of IS 5466
(1)	(2)	(3)	(4)
i)	Moisture, percent by mass, <i>Max</i>	15	6
ii)	Tannins ¹⁾ , percent by mass, <i>Min</i>	15	10
iii)	Non-tannins ¹⁾ , percent by mass, <i>Max</i>	12	9
iv)	pH of analytical strength solution, <i>Min</i>	4.0	12
v)	Colour:		13
	a) Yellow/Red, <i>Min</i>	2.0	
	b) Red, <i>Max</i>	8.0	
vi)	PCP content ¹⁾ , mg/kg	5	16

¹⁾ Calculated on moisture-free basis.

ANNEX A

(Clause 6)

SAMPLING OF *BABUL* BARK

A-1 SCALE OF SAMPLING

A-1.1 Lot

In a single consignment all the *BABUL* bark of the same form of cutting, collected and dried under similar conditions, shall constitute one lot.

A-1.2 For ascertaining the conformity of the material to the requirements of this standard, each lot shall be considered separately. The number of packages to be selected for this purpose shall depend on the size of the lot and shall be in accordance with Table 2.

Table 2 Number of Packages to be Sampled

Sl No.	No. of Packages in the Lot <i>N</i>	No. of Packages to be Sampled <i>n</i>
(1)	(2)	(3)
i)	Up to 25	3
ii)	26 to 50	4
iii)	51 to 150	5
iv)	151 to 300	6
v)	301 to 500	7
vi)	501 to 1 000	8
vii)	1 001 and above	9

A-1.3 The packages shall be selected at random from the lot. To ensure randomness of selection, use of random number tables (*see* IS 4905) shall be made. In case, random number tables are not available, the following procedure may be adopted:

Starting from any package, count all the packages in the lot as 1, 2, 3,etc, up to r and so on where r is the integral part of N/n , N being the number of packages in the lot and n the number to be sampled. Every r th package thus counted shall be withdrawn to constitute the sample.

A-2 PREPARATION OF SAMPLES

A-2.1 From each of the packages selected according to A-1.2, small portions of the material shall be taken from different parts so as to obtain a most representative sample of the package. The total quantity of the material taken from a package shall be at least three times the quantity needed for carrying out all the tests.

A-2.2 The material obtained from each package in A-2.1 shall be divided into three equal parts, each forming a test sample representing the package. One set of test samples each representing a selected package, shall be marked for the purchaser, another set for the supplier and the third set kept as a referee sample.

A-2.3 All the test samples shall be immediately transferred to separate sample containers and shall be sealed air-tight and marked with full particulars necessary for proper identification, such as name of the supplier, place and year of packing, lot number, date of sampling and name of sample.

A-2.4 The referee sample consisting of a set of test samples shall bear the seal of both the supplier and the purchaser and shall be kept at a place till such time and under conditions as agreed to between the two for use in case of dispute.

A-3 NUMBER OF TESTS AND CRITERION FOR CONFORMITY

A-3.1 Number of Tests

Each test sample in the set shall be tested individually for all the requirements of this standard.

A-3.2 Criteria for Conformity

The lot shall be declared to conform to the requirements of this standard if each test sample passes all the tests.

ANNEX B*(Foreword)***COMMITTEE COMPOSITION**

Leather, Tanning Materials and Allied Products Sectional Committee, CHD 17

<i>Organization</i>	<i>Representative(s)</i>
Central Leather Research Institute, Chennai	DIRECTOR (Chairman)
A. V. Thomas Leather & Allied Products Pvt Ltd, Chennai	SHRI HABIB HUSSAIN SHRI K. MANIVANNAN (<i>Alternate</i>)
All India Skins & Hide Tanners and Merchants Association, Chennai	SHRI MOHAN M. SREENIVAS SHRI S. MOHAMMED HASSAN (<i>Alternate</i>)
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Bata India Ltd, Hathidah	DR SUDHIR KUMAR DAS
Central Footwear Training Institute, Agra	SHRI S. N. GANGULY SHRI S. CHAKRABORTY (<i>Alternate</i>)
Central Leather Research Institute, Chennai	DR C. MURALIDHARAN
Central Pollution Control Board, Delhi	SHRI T. VENUGOPAL SHRI AJAY AGGARWAL (<i>Alternate</i>)
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Indian Leather Products Association, Kolkata	REPRESENTATIVE
Indian Leather Technologists Association, Kolkata	SHRI ARNAB JHA DR GAUTAM MUKHERJEE (<i>Alternate</i>)
Indian Shoe Federation, Chennai	SHRI RAMESH SUBRAMANIAM SHRI ABHIJIT SETH (<i>Alternate</i>)
Indofil Chemicals Co Ltd, Mumbai	SHRI S. K. JHA
International Institute of Saddlery Technology and Export Management, Kanpur	REPRESENTATIVE
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Khadi & Village Industries Commission, Mumbai	SHRI S. VIJAYA KUMAR SHRI R. LAWRENCE (<i>Alternate</i>)
Kings International Ltd, Kanpur	SHRI TAJ ALAM SHRI G. S. KUMARAN (<i>Alternate</i>)
Leather Chemicals Manufacturers Association, Mumbai	SHRI VADUVUR T. SRIKANTH SHRI SANJEEV MEHTA (<i>Alternate</i>)
Liberty Footwear, Karnal	SHRI ADESH GUPTA SHRI S. S. LAHIRI (<i>Alternate</i>)
Ministry of Commerce, New Delhi	REPRESENTATIVE

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<i>Organization</i>	<i>Representative(s)</i>
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National Institute of Fashion Technology, New Delhi	SHRI E. SIVASAKTHI
Office of the Development Commissioner, MSME, New Delhi	SHRI S. K. BASU SHRI R. K. KAPOOR (<i>Alternate</i>)
Planning Commission, New Delhi	DR S. C. LAHIRI
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BIS Directorate General	Scientist 'F' and Head (CHD) [Representing Director General (<i>Ex-officio</i>)]
 <i>Member Secretary</i> SHRI E. DEVENDAR Scientist 'F' and Head (CHD), BIS	

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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